REMARKS

New claims 6 and 7 find support, for example, at page 14, lines 15-17 of the specification.

Review and reconsideration on the merits are requested.

Claims 1, 2, and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,387,238 to Merk et al in view of U.S. Patent 6,949,178 to Tennakoon et al.

Applicants traverse, and respectfully request the Examiner to reconsider in view of the several differences between Merk et al or Tennakoon et al and the method of the present claims as shown below.

Tennakoon et al:

1. Materials: Water, Acetyl donor supplied to anode side through a membrane, Oxygen

2. Ion exchange resin: using as a membrane for solid electrolyte (ion-conductive material) and catalyst binder

3. Indifferent electrolyte: not used

4. Product of electrolysis: Hydrogen peroxide from oxygen and water

5. Synthetic method of peracetic acid: indirect electrolysis (reaction in solution) by mixing acetyl donor and the produced hydrogen peroxide

6. *Cell structure: a cell having a membrane in intimate contact between the anode and a gas diffusion cathode as unambiguously defined in claim 1 of Tennakoon et al. There is no space between the membrane and the cathode, that is, there is no special chamber for the peracetic acid solution that is produced.*

Merk et al:

1. Materials: Water, Acetyl donor, Oxygen(air), Sulfuric acid (Anolyte)

2. Ion exchange resin: using as a membrane only for separation of the electrolyte

3. Indifferent electrolyte: such as sulfuric acid (anolyte) and phosphate (catholyte, which is not easy to separate from the product)

4. Product of electrolysis: Hydrogen peroxide from oxygen and water

5. Synthetic method of peracetic arid: indirect electrolysis (reaction in solution) by mixing acetyl donor and the produced hydrogen peroxide

6. *Cell structure: a cell having a membrane which separates the unit into an anode chamber and a cathode chamber, wherein the cathode is in contact with an electrolyte, as defined in claims 4 and 7 of Merk et al. There is no description as to use of a particulate solid acid catalyst packed in the cathode chamber*.

Present Invention:

1. Materials: Water, such as Acetyl donor, Oxygen (air)

2. Ion exchange resin: using as a particulate solid electrolyte (ion-conductive material) and catalyst for the purpose of reaction

3. Indifferent electrolyte: not used

4. Product of electrolysis: Peracetic acid from the reaction of acetyl donor with adsorbed oxygen atom covering the electrode surface.

5. Synthetic method of peracetic acid: mainly by direct electrolysis with electrochemical energy

6. *Cell structure : a cell having a membrane which separates the unit into an anode chamber and a cathode chamber, wherein a particulate solid acid catalyst is packed in the space between the cathode and the membrane*.

As shown above, the method of the present invention differs from that of Merk et al and Tennakoon et al in that the electrolytic cell used in the method of the present invention has a membrane which separates the unit into an anode chamber and a cathode chamber, wherein a particulate solid acid catalyst is packed in the space between the cathode and the membrane. A characteristic feature of the invention is to adopt a suitable space between the cathode and the membrane in order to produce and remove peracetic acid solution without stagnation. On the other hand, providing such space leads to an increase in cell voltage due to the high resistivity of the solution containing no electrolyte, specifically, no electrolyte which participates in the reaction. Thus, the said acid catalyst is arranged between the gas cathode and the membrane as an essential and material aspect of the invention.

Such structure is not disclosed by any of Merk et al and Tennakoon et al, and there is no apparent reason in either of the cited references which would lead one skilled in the art to arrange a particulate solid acid catalyst between the gas cathode and the membrane as claimed. To the contrary, as shown above, both Merk et al and Tennakoon et al employ a cell structure where there is no space between the membrane and the cathode (Tennakoon et al) or where the cathode is in contact with an electrolyte (Merk et al).

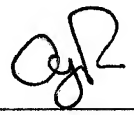
To further distinguish over the applied prior art, Applicants present new claims 6 and 7 depending from claims 1 and 5, respectively, which recite that the electrolytic cell has a space of from 1 mm to 50 mm between the gas cathode and the membrane.

For the above reasons, it is respectfully submitted that the present claims are patentable over Merk et al in view of Tennakoon et al and withdrawal of the foregoing rejection under 35 U.S.C. § 103(a) is respectfully requested. Withdrawal of all rejections and allowance of claims 1, 2 and 5-7 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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